

Digital Agenda for Europe Annual Progress Report 2011

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This document provides a brief summary of the Digital Agenda for Europe Annual Progress Report. For each of the pillars identified as focus areas in the Digital Agenda for Europe, progress is reported and proposed activity for the next 12 to 24 months are summarised, along with related SESERV findings. Each section finishes with a recommendation on the basis of the experience from the SESERV events in bringing together those developing and those studying the Future Internet.

Introduction

The Digital Agenda for Europe 2020¹, a European instrument to cover investment and research focus for the period 2010 to 2020, provides for specific effort to be invested in areas of ICT to enable and sustain European growth. The 2011 progress report² has just been published, highlighting progress to date as well as setting on the next steps to be taken in the period 2012 and 2013 (the next 12 to 24 months). The SESERV deliverable D3.1: First Report on Social Future Internet Coordination Activities³ looked at the Digital Agenda in the context of societal challenges and trends, and how they may affect the Future Internet (FI). In addition, the SESERV Oxford Workshop⁶ in June 2011 and the SESERV Athens Workshop⁴ in January 2012, with participants from technology providers, social scientists, including economists, as well as policy makers, highlighted concerns and issues of various stakeholders in the light of how technology is developing. In this short report, we draw on the

¹ http://ec.europa.eu/information_society/digital-agenda/index_en.htm and associated documents.

²

http://ec.europa.eu/information_society/newsroom/cf/itemdetail.cfm?item_id=7699&utm_campaign=isp&utm_medium=rss&utm_source=newsroom&utm_content=tpa-5

³ Available from <http://www.seserv.org/publications/deliverables>

⁴ <http://www.seserv.org/fise-conversation/Outcome-of-the-SESERV-workshop-on-the-interplay-of-economics-and-technology>

experience and outcomes of that deliverable and those events in summarising and assessing progress on the Digital Agenda for Europe.

Pillar 1: A vibrant digital single market

<i>Actions</i>	21	This pillar is focused on issues of cross-border retail and commercial activities. Digital rights (such as data protection and copyright) need co-ordination within the EU to avoid current anomalies; commercial activities are also hampered by issues of cross-border jurisdiction.
<i>Complete</i>	8	
<i>Delayed</i>	5	
<i>On Track</i>	8	

Focus for the next 12-24 Months, with expectations on the European Parliament as well as Member States

- *Digital content*: more on copyright and IPR enforcement with cross-border co-operation
- *e-Commerce*: effort to boost e-Commerce; review of eSignature Directive; focus on cloud computing
- *Consumer Trust*: Data Protection Directive; support for cross-border retail activities (new instruments and guidelines); EU online trustmarks
- *Single Market for telco services*: review of pricing (especially roaming) and non-EU telco market.

Relevant SESERV Themes: Focusing on common cross-border controls and copyright levies may miss the point; it may well be time to revisit the whole issue of ownership and copyright – not just for orphan works as Digital Agenda Action 2 describes. Access at least to works of value should be a right rather than the privilege of those with appropriate subscription⁵. If digital inclusion is to be taken to its logical conclusion, we should consider how to make information and content freely available.

In addition there has been some consultation activity, there is little evidence of direct citizen involvement, either in terms of observing what current usage patterns or what their expectations might be. At the SESERV Oxford workshop⁶, the view was expressed many times that community members and individuals wanted more transparency and more involvement at all stages of development. For cloud computing, there needs to be some concerted focus on risk management and accountability, as well as provision for ease-of-transfer between providers.

Recommendation: *consideration of the right to connection and how this affects issues of content availability is highly significant. In addition, more direct involvement of end-users in the design and validation of systems for cross-border activities. User focus is transparency foremost; unifying processes across jurisdictions may be secondary.*

⁵ <http://www.seserv.org/panel/conferences-webcasts#dutton>

⁶ <http://www.seserv.org/panel>

Pillar 2: Interoperability and standards

<i>Actions</i>	7	This pillar aims to improve ICT standardisation activities, including standard-setting, better use of standards and increased interoperability and innovation across Europe.
<i>Complete</i>	3	
<i>Delayed</i>	1	
<i>On Track</i>	3	

Focus for the next 12-24 Months, with expectations on the European Parliament as well as Member States

- *Continued reform of European Standardisation*: looking to improve common approaches and management of standards
- *Multi-stakeholder platform set up*: to encourage debate amongst industry, policy-makers and end-users on issues of standardisation
- *Guidelines for public procurers*: to enhance efficiency and avoid dependence on single vendors
- *Feasibility study to get market players to license interoperability information*: to promote interconnectivity for all involved
- *Promotion of rules on IPR and licensing conditions, including ex-ante disclosure*: to further co-operation

Relevant SESERV Themes: In the discussions and debates held in 2011 (*loc cit*) as well as brief survey of stakeholder interests⁷, it became abundantly clear that much co-operation and therefore innovation was being hampered because of the lack of a common understanding of terms and issues, as well as a failure to encourage and facilitate participation by all relevant stakeholders. Enabling multi-stakeholder discussion fora is seen as a positive step in the right direction, though the FI ecosystem is changing and new stakeholders, such as application developers and content providers, have increasing influence in relation to traditional incumbent operators and infrastructure providers.

Recommendation: *continue to involve all interested parties – paying special attention to the changing nature of the FI ecosystem and associated stakeholders. There may well be a need, not least because of the different local agreements within country to standardise language and terminology first.*

Pillar 3: Trust and security

<i>Actions</i>	14	This pillar embraces all aspects of network and online security, including attacks and online safety and privacy. There is significant emphasis on the
<i>Complete</i>	2	

⁷ <http://www.seserv.org/fise-conversation/fise2012focusgroupssurveyresults>

Delayed 2 protection and maintenance of critical infrastructure.
On Track 10

Focus for the next 12-24 Months, with expectations on the European Parliament as well as Member States

- *Continued focus on network and information security to guard against attack*: to maintain awareness and sustain readiness to respond to attack
- *Recognising increasing dependency on online interactions, a collection of measures to guarantee online safety and privacy*: looking at online privacy protection, security breach notification, and the protection of minors
- *Protection for critical infrastructure*: to maintain national infrastructures in times of crisis
- *Cyber crime*: to provide EU-wide guidance and support

Relevant SESERV Themes: discussions highlighted various concerns from different groups: technologists noted that regulation was often heavy-handed, and might hamper genuinely beneficial work (such as healthcare systems); yet on the other hand, online identity is not the static concept associated with national identity schemes, but rather a dynamic feature of online activity^{8,3}. In some cases, such as social or collaborative networks, participants may even define and be comfortable setting their own security and privacy boundaries⁹. Once again, it appears that end-user involvement in discussion and design may be needed, along with a consideration of how those users interact and exploit online services. Interestingly, in the context of both online communities and identity, participants came back to the question of human rights: does an individual have the right to disappear or be forgotten online or are their circumstances (such as crimes against humanity) which override such rights? Ultimately, users were more concerned about flexible privacy and presence management than one-size-fits-all legislation.

Looking at the infrastructures themselves¹⁰, there are significant inherent risks which should be considered: both clouds and sensor networks may be prone to misuse from malicious users misappropriating resource or services. Many questions arise: who should take responsibility for protecting resource: the provider or users? How are data to be protected? Is there sufficient risk expertise available? Is there even enough manpower to handle attacks?¹¹

⁸ http://8784322205271196501-a-1802744773732722657-s-sites.googlegroups.com/site/seservtest1/panel/Cross-thematictrendsofbreakoutsessions.pdf?attachauth=ANoY7cqGq2cyRfVSqttj7uBCnptavikPFLBc_EASbnv0ONW4-ADC-iLJoEw_6w9kVYtKWgbO7tvGDjSTjb0WOyk4I_vZ3mN4PI_f20U_yRlyJbh7eICXboSRV5cu6DROF2YFkHic_P4gyKD_M2407-MBV_8Cnfy6yd0hE3-IQ_EFP4dnuQa7-Ug8VGwTLkLBPr-kolwAWBmVjQVAOV8ZlrROqxktch--Etb_5gHh78jXV5MwCz7Xje-ESeOGiKszxOc2bfGGXemrQ&attredirects=0

⁹ <http://www.seserv.org/fise-conversation/legislativetensionsinparticipationandprivacy>

¹⁰ http://8784322205271196501-a-1802744773732722657-s-sites.googlegroups.com/site/seservtest1/panel/SESERV_Security.pdf?attachauth=ANoY7coGeavJLP8s74zb3iGtq1G70unEOiEG3vBXVat3DIH2sBntXJMFUXVJqjV_Ymw16hTclKP0RZTRMQXnhm-1jZi5blW0ClvgolZxvQp9SAg3LHd4hPeBp5aqXzY2r_lVrkqkcmDHj_xvLYj5pBm08oYU1IBJLyTQ6f8Ep3HuVlyBhWPpPp0Oo-Bsep4gDHgk_K7Zlw5SV_L_i0oQwHYVgDbw4w%3D%3D&attredirects=0

¹¹ See Section 3.3.1 in *D3.1: First Report in Social Future Internet Coordination Activities* available at <http://www.seserv.org/publications/deliverables>

Recommendation: *more direct involvement of end-users in the design and validation of trust and security issues, along with some flexibility in allowing users to set their own boundaries. In addition, some consideration of what online identities really are and how to deal with any “right to be forgotten”. Finally, access to appropriate risk and security expertise should be provided, including ensuring sufficient resource is available to handle alerts and attacks.*

Pillar 4: fast and ultra fast internet access

<i>Actions</i>	8	This pillar focuses on maintaining the EU position over and against the Far East in download speeds and connectivity. The overall target is download speeds of 30 Mbps, with capabilities of 100 Mbps not uncommon.
<i>Complete</i>	3	
<i>Delayed</i>	1	
<i>On Track</i>	4	

Focus for the next 12-24 Months, with expectations on the European Parliament as well as Member States

- *Significant EU funding* (some €50B in total) has been ear-marked for the **Connecting Europe Facility**: to provide support in the provision of network and infrastructure
- *Broadband deployment*: promoting investment at a national and cross-EU level in ICT and broadband
- *Cohesion policy*: promoting environmental awareness, SME competitiveness and innovation
- *Rural development*: encouraging access to high-quality ICT services across rural areas

Relevant SESERV Themes: the SESERV Oxford workshop⁶ included presentations from technology providers in support of commercial and other activities in remote areas. Perhaps more significantly, though, the SESERV Athens workshop⁴ highlighted that traffic management remains far from uniform or indeed transparent especially at the edge of the network and in rural areas. Network and infrastructure providers are focused on high-value traffic and end-users are often consigned to best-effort whilst high quality of service (QoS) delivery goes to large business users. At the same time, keynote speakers at the event were unanimous in pointing out that capital investment cannot keep up with current traffic projections: there is a definite need to think more carefully about *how* traffic is managed rather than just the amount of traffic. It was also noted that existing and planned infrastructures may not be able to keep pace with demand¹⁷: actions associated with this pillar may be derailed already by the services being offered already.

Recommendation: *investment in infrastructure is not enough, and may not even keep pace with projected traffic. There is already a need to optimise usage rather than let traffic spiral out of control. Further, rural and last-mile provision may need careful monitoring by suitably empowered industry watchdogs to ensure end-to-end QoS irrespective of user type.*

Pillar 5: Research and Innovation

<i>Actions</i>	7	This pillar is geared towards maintaining competitiveness over and against the rest of the world, as well as trying to manage current disparate efforts.
<i>Complete</i>	1	
<i>Delayed</i>	0	

Focus for the next 12-24 Months, with expectations on the European Parliament as well as Member States

NB: although most goals are long-term, 2012-2013 is seen as crucial in providing the justification for continued investment.

- *Continuation of EC support: move from current FP7 and CIP programmes towards Horizon2020¹², including PPP and related partnering schemes*
- *European Innovation Partnership on Active and Health Ageing: to kick-start efforts in this area*
- *European guidelines on key technologies: providing guidance on governance for PP-run ICT infrastructures*
- *Working documents:*
 - *Communication on scientific information: promoting research infrastructures in support of open access to research data and publications*
 - *EU Competitiveness on the Web: identifying blockers to EU competitiveness*
 - *Strategy for cloud computing*

Relevant SESERV Themes: It was striking that individual projects and technologists attending the SESERV Oxford workshop only occasionally had any understanding of the *Digital Agenda for Europe*; even occasionally regarding such instruments as intrusive and unhelpful¹³. That being said, there was significant interest in topics related to the other pillars, such as trust and security, inclusion and connectivity, as well as cross-jurisdiction working. The SESERV Athens workshop continued the focus on net neutrality (ensuring all players are treating equally and fairly), traffic management in light of significant pressure from content suppliers and cascading agreements between providers in different geographies. Perhaps there is a disconnect between policy makers and technologists and scientists: the EC needs to engage directly with those building, those studying and those using the Internet to inform strategic thinking. With the publication of Horizon2020, this may well offer the bridge between the over-arching concerns and dictates of the Digital Agenda and the technologies (“Excellent Science”) that are intended to improve European society (“Better Society”).

Recommendation: *research and innovation directions do include issues which have been identified as strategic. It is time to start to incorporate the findings of current projects in shaping what should be the focus in Horizon2020 and beyond. For the “Better Society” arm of Horizon2020, how users actually use services and applications, as well as what that will do to the infrastructure, needs to be examined carefully.*

Pillar 6: Digital literacy, skills and inclusion

Actions	12	Recognising that there is an unacceptable “digital divide”, this pillar targets
Complete	3	the assessment and maintenance of the appropriate skills to allow all to

¹² http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=home

¹³ <http://www.seserv.org/panel/videos-interviews>

<i>Delayed</i>	3	benefit from the digital world.
<i>On Track</i>	6	

Focus for the next 12-24 Months, with expectations on the European Parliament as well as Member States

- *Proposals for digital competencies*: identify what skills are available and what needs to be done to support others
- *Online interactive education platform*: to provide materials about new media technologies and literacy
- *Evaluation of accessibility*: the Commission will review public websites and supporting legislation to ensure that all sites are accessible to all

Relevant SESERV Themes: The SESERV Oxford workshop highlighted a number of blockers to progress, including the lack of a common understanding, and even vocabulary for exchange; there was a tendency for the adoption of polarised views in discussion. The SESERV Athens workshop highlighted such disparities even further: network and infrastructure providers barely aware of end-user expectations from the services they use. Once more, engaging with all stakeholders would bring benefits in understanding how the FI is likely to be used; and subsequently, what the likely effects are in the infrastructure and processes needed to support it. Further, the SESERV Oxford workshop revealed suspicion attaching to the IoT; and to a significant desire to be involved in the shaping and management of online communities by participants within that community; the skill gained through experience not explicit training (as in the case of SNS activity) may not equip users to appreciate fully what is important for their own protection, though gaining experience and skill improves levels of trust¹⁴.

Recommendation: *providing appropriate support and education to increase digital awareness will enable users to make appropriate and informed decisions about security and risk, increasing their levels of trust. In addition to user involvement, it is important though to introduce ethics into the development of infrastructures.*

Pillar 7¹⁵: ICT-enable benefits for EU society

<i>Actions</i>	28	This pillar focuses on specific societal challenges – the environment, an ageing population, efficient health and public services – on the basis that ICT has significant potential to affect and benefit everyday life.
<i>Complete</i>	5 ¹⁶	
<i>Delayed</i>	8	
<i>On Track</i>	15 ¹⁶	

¹⁴ Dutton, W.H. and Shepherd, A. (2003) "Trust in the Internet: The Social Dynamics of Experience Technology", The Oxford Internet Institute, available from: <http://www.oii.ox.ac.uk/resources/publications/RR3.pdf>

¹⁵ There is an 8th pillar dealing with International Aspects of all of the other pillars. This is not specifically reviewed or summarised here. Of the four actions, one has been completed and the others are on track.

¹⁶ 1 is reported as partially complete, and has therefore been assigned to "On Track" in the summary table here.

Focus for the next 12-24 Months, with expectations on the European Parliament as well as Member States

- *ICT for sustainability*: recognising that the benefits of ICT come at a cost – higher energy consumption – there needs to be a focus on common measurement methods as well as the exploration of smart grids for energy
- *eHealth*: including extending access to online medical services, establishing a minimum set of patient data and introducing standard practices and so forth
- *Cultural and creative industries*: promoting online access to European culture
- *eGovernment*: promoting access to state information, as well as of the recognition of e-identification and e-authentication
- *Intelligent transport*: focused overall on better and more efficient transport, with single and unified solutions for air and maritime travel.

Relevant SESERV Themes: There are a number of disparate factors to be considered under this final¹⁵ pillar. The SESERV Athens workshop highlighted the need to optimise resource utilisation, not just expect continued growth: capacity is not the answer. This feeds directly into the focus on the sustainable use of ICT resource, which may be comprised still further by the exponential growth in network bandwidth consumed by the services of media providers¹⁷. But in addition, there is a need to consider how resource is used. During the 4th FI Cluster Workshop, the scene was set against Ehrlich's original assertion that exponential economic growth is not possible because of the ecological constraints of the planet. Energy efficiency driven by a desire to reduce costs and increase profit is not the right focus: supply is limited and this should dictate how energy is exploited, not simple economics¹⁸. There is a clear need to identify and understand the concerns if some level of sustained growth – an appropriate goal given the importance the FI will play – is to be envisaged. There is a way to go, therefore, in recognising an urgent need for efficient use of scarce resource, whilst at the same time trying to understand the context in which and how individuals really use those resources.

Recommendation: *there is an urgent need to review actual resource usage alongside the focus on the optimisation of resource usage. Individual users develop their own concepts of what they are prepared to share and how it should be protected. Usage projections suggest that they are rapidly becoming a concern if not completely unsustainable.*

Conclusion

In this brief summary, the 2011 status of the Digital Agenda for Europe has been reviewed against a background of the findings of activities in the SESERV project to date. Individual indicators focus on the achievement of specific goals related more to coverage, governance and regulation than to usage. This looks like a significant shortcoming: both the societal and economic strands of SESERV indicate

¹⁷ <http://www.theatlanticwire.com/technology/2011/10/netflix-consumes-third-americas-internet-bandwidth/44264/>

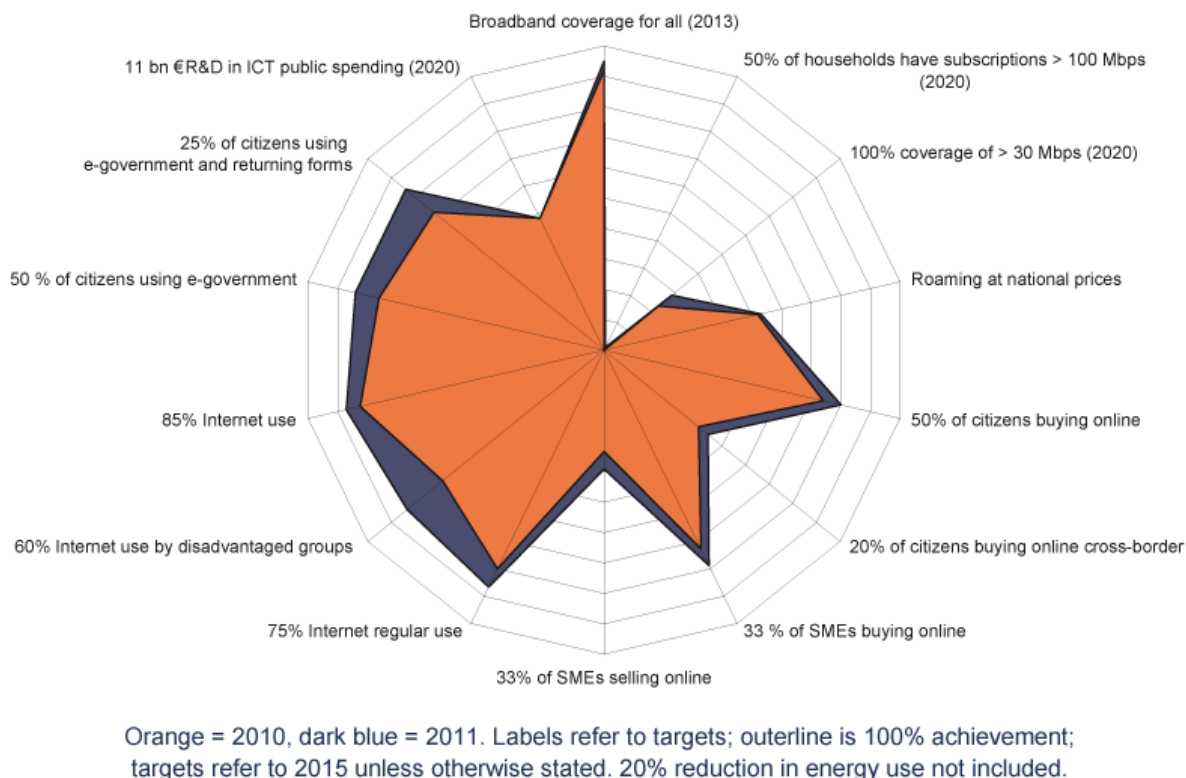
¹⁸ <http://www.seserv.org/fise-conversation/supermarketstyleenergysavingbuyonegetone50off>

1. usage tends to be creative and may, if left unchecked, compromise existing infrastructures
2. regulation does not necessarily meet user expectations or requirements;
3. users will often judge for themselves how to engage online, though
4. increased skill and experience can help to foster and improve trust in the online environment
5. resource is scarce and needs to be used more optimally, therefore
6. blanket investment to increase capacity is short-sighted and ultimately counter-productive

In moving forward, there needs to be more inclusion of users, not least those with experience of using and exploiting online services and applications, in the heart of strategic discussions. Just as the SESERV Oxford workshop discovered, online communities are becoming a significant force, crying out for involvement in the development and management of their own communities. It is therefore perhaps time that EU citizens should be engaged directly by policy-makers in shaping the strategy for the Future Internet.

Appendix: the *Digital Agenda for Europe Scorecard*

How the EU scores on the Digital Agenda targets



Source: *Digital Agenda for Europe 2020 Scorecard*¹⁹

By way of summary, the figure above (from the Digital Agenda site) provides an indication of how trends and behaviours are tracking against the Commission's stated target. Refer to the bottom label on how to interpret the radar chart.

The main area of improvement – moving towards the overall target on the outside of the radar chart – is really Internet usage: more SME's buying and selling online; more disadvantaged users online; more citizen engagement online; and so forth. In the light of the SESERV Athens workshop, this highlights the need for more careful traffic management and monitoring.

¹⁹ http://ec.europa.eu/information_society/digital-agenda/scoreboard/index_en.htm